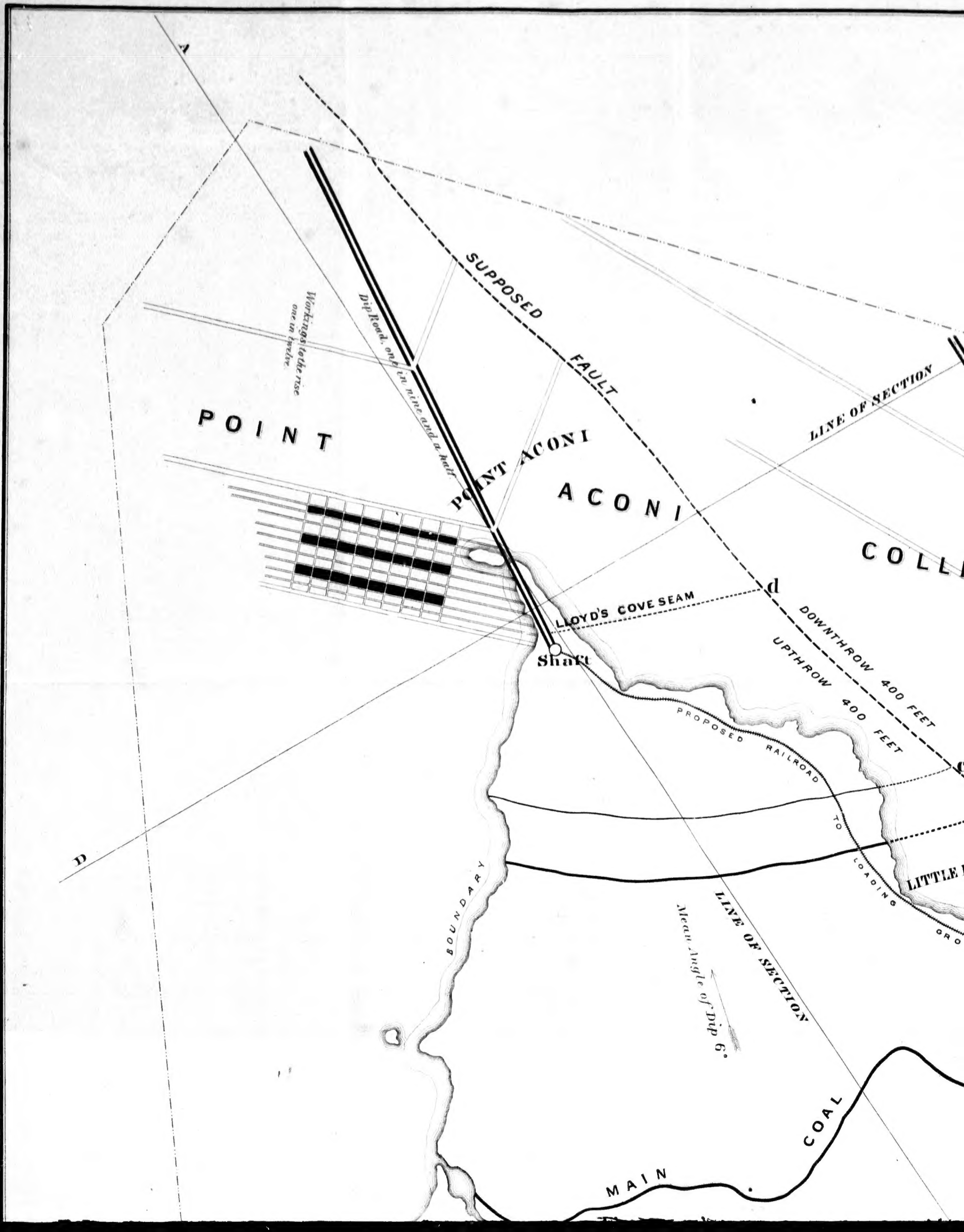
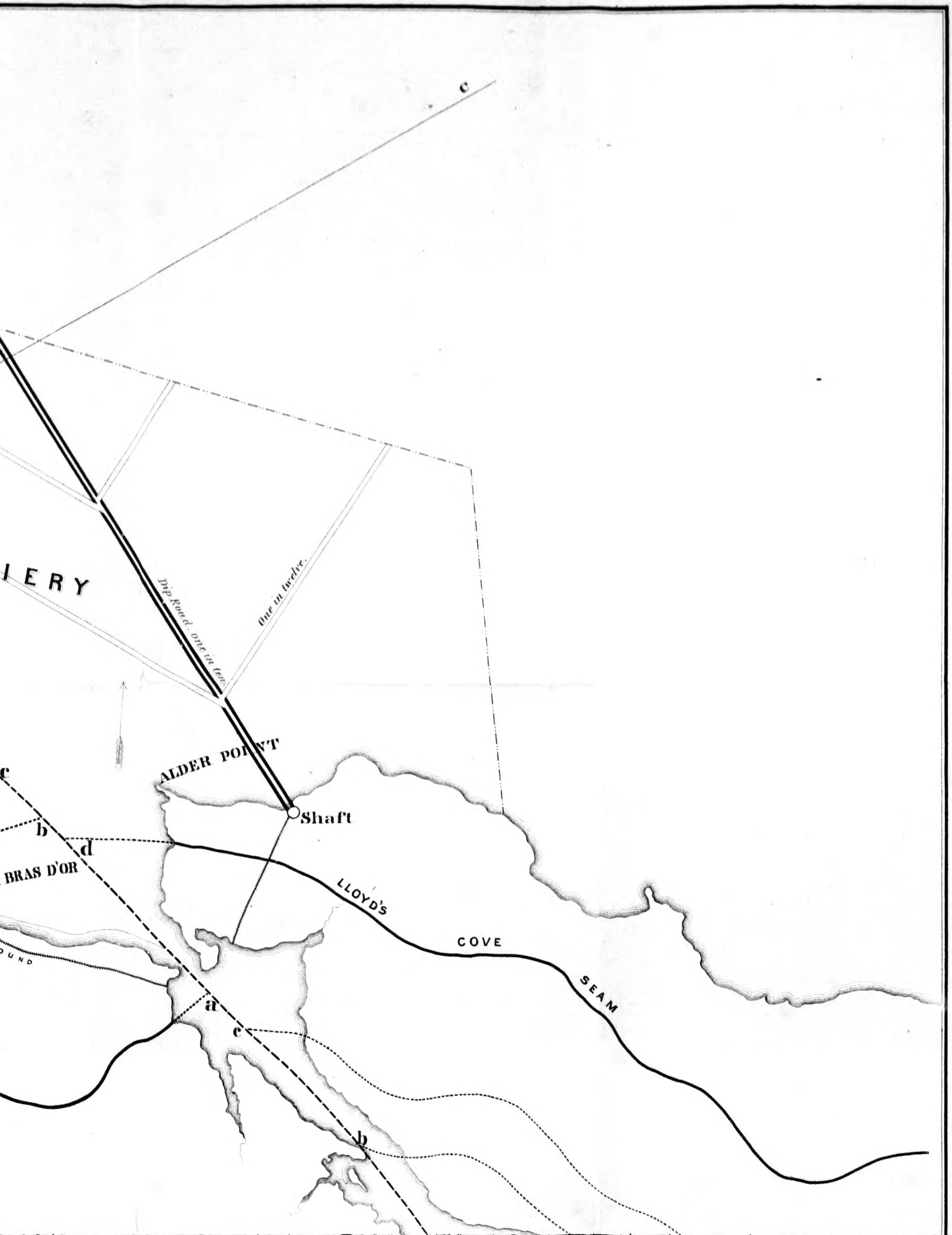
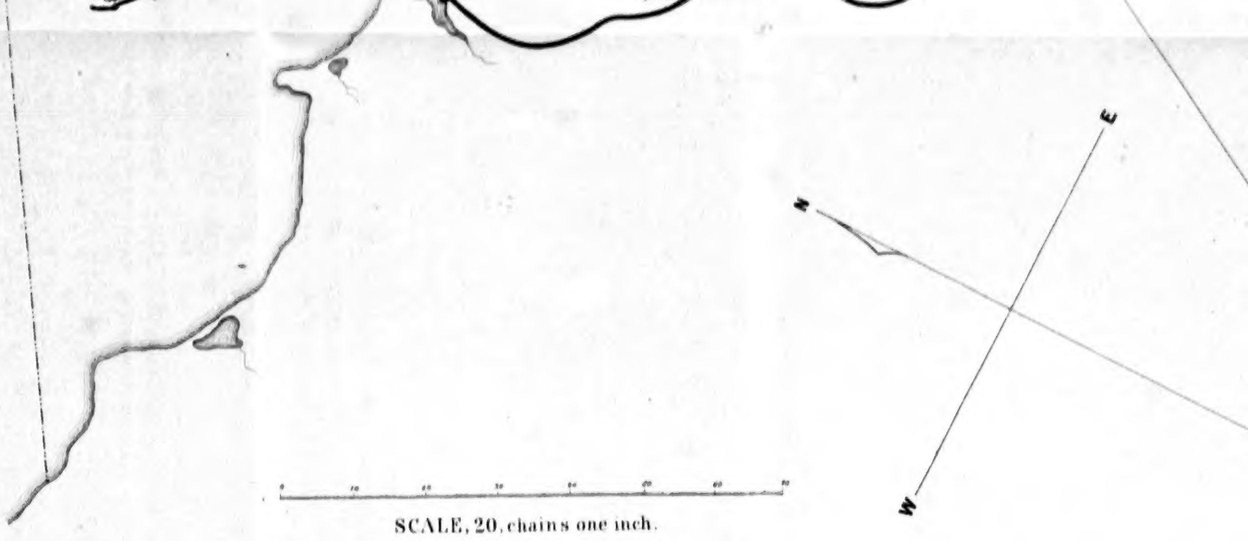
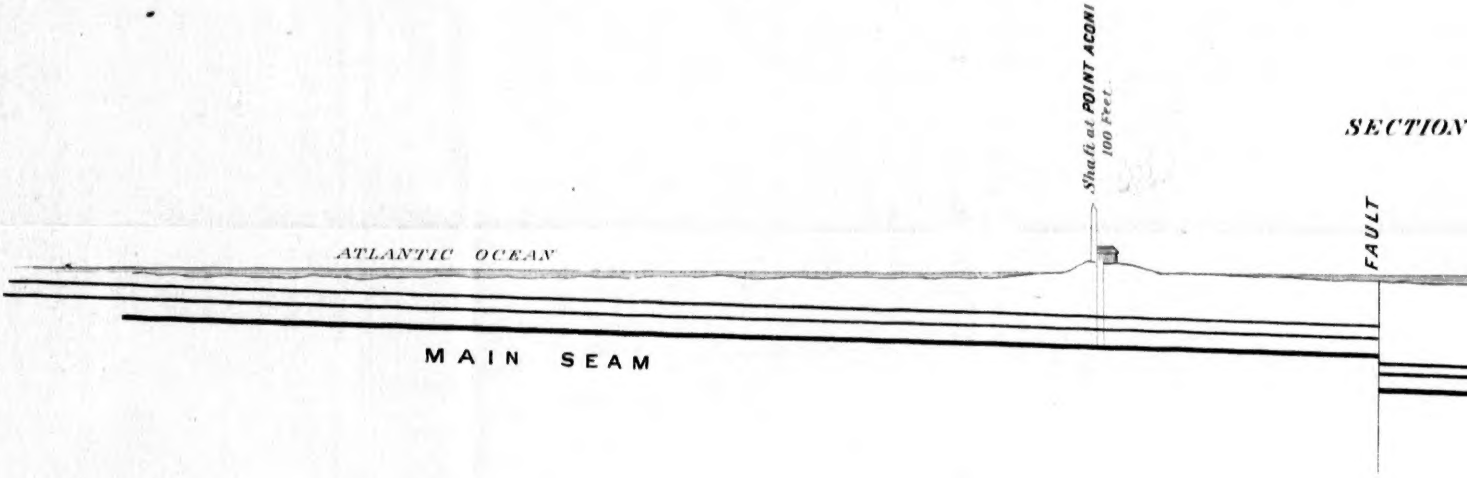

A
POINT
ACONI
Workings to the rise one in twelve
Dip Road, one in nine and a half
SUPPOSED FAULT
POINT ACONI
LINE OF SECTION
COLL
LLOYD'S COVE SEAM
d
Shaft
DOWNTHROW 400 FEET
UPTHROW 400 FEET
PROPOSED RAILROAD TO LOADING GRO
LITTLE
D
BOUNDARY
LINE OF SECTION
Mean Angle of Dip 6°
MAIN COAL


c
IERY
Dip Road. one in ten.
One in twelve.
ALDER POINT
Shaft
c
b
d
BRAS D'OR
LLOYD'S COVE SEAM
OUND
a
c
b





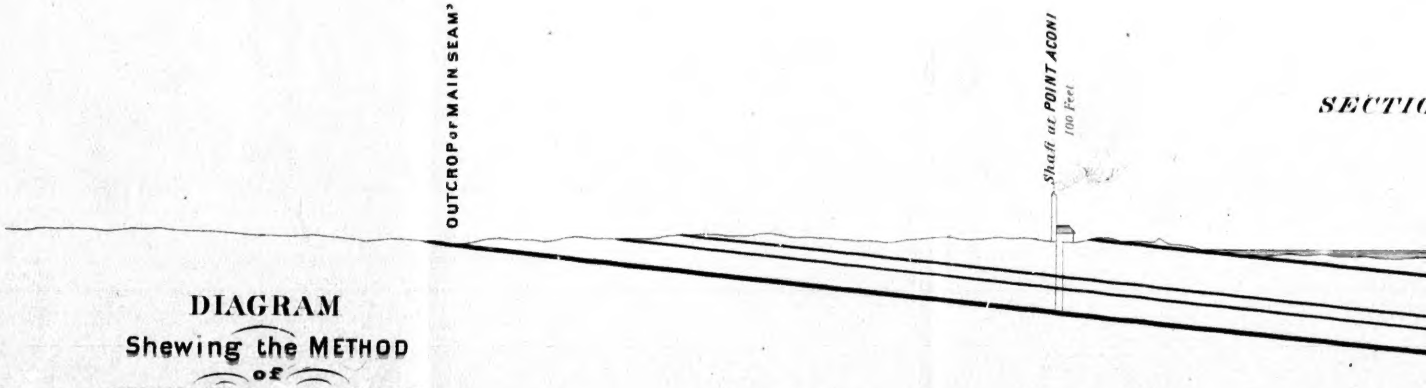
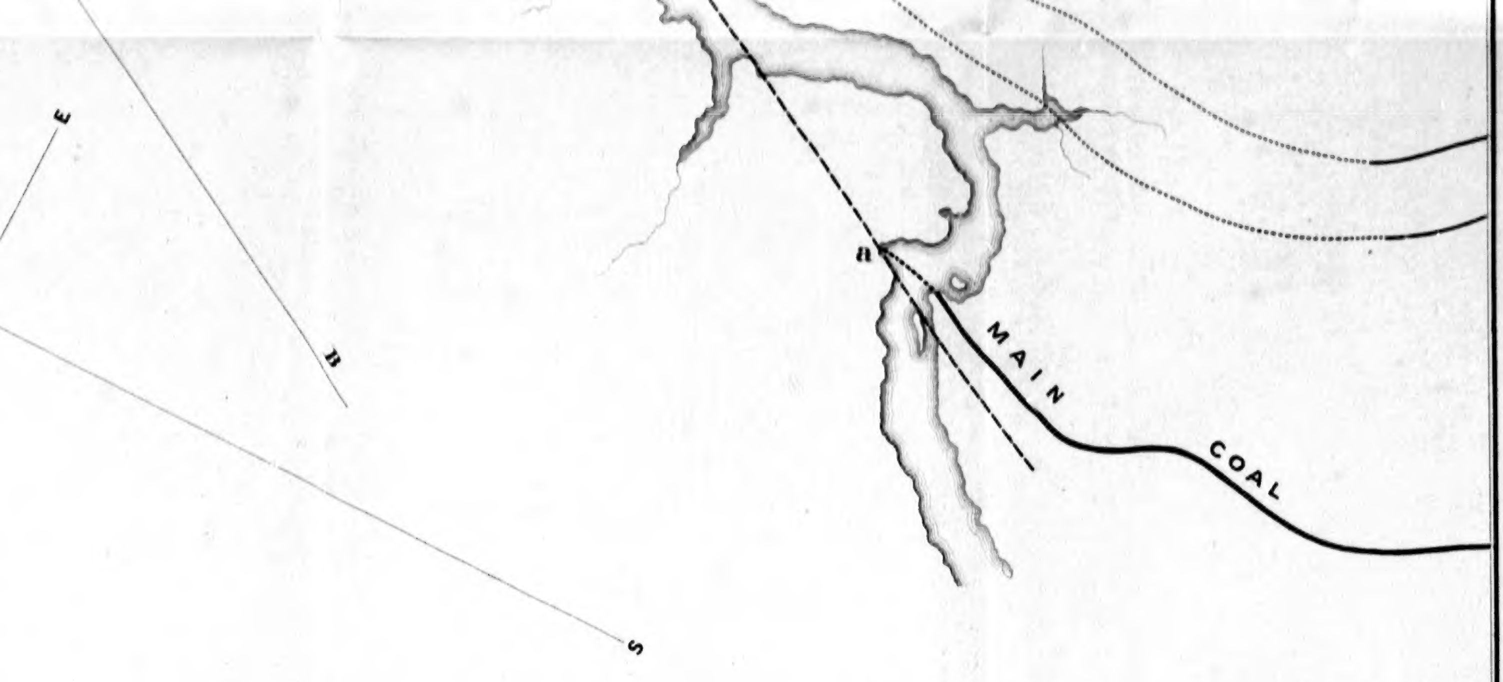
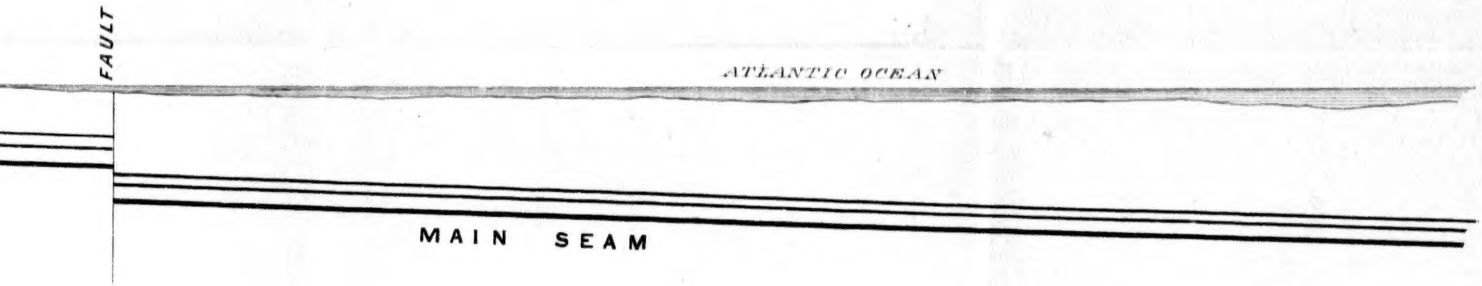


DIAGRAM
Shewing the METHOD
of
WORKING to the RISE
at
POINT ACONI COLLIERY
CAPE BRETON.

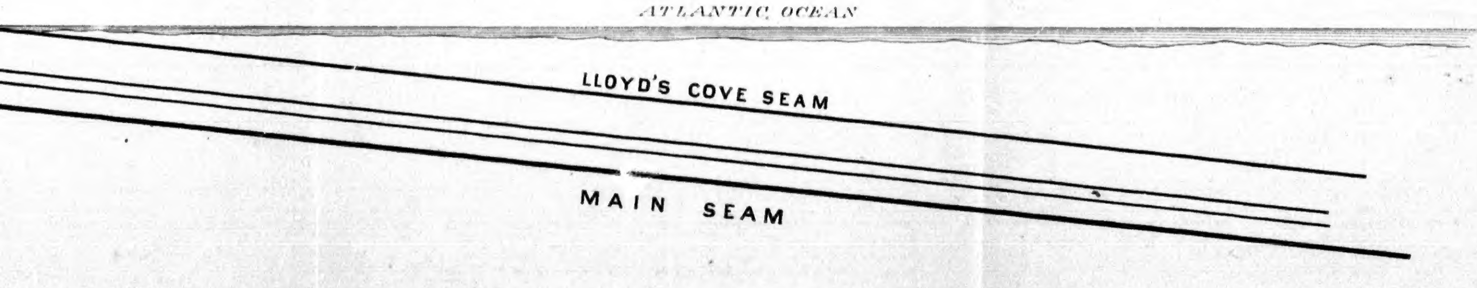
H.W. Longfellow & Co.Lith.Boston.



SECTION ON LINE C D.



SECTION ON LINE A B.



llow & Co.Lith.Boston.

REPORT

ON THE

POINT ACONI COAL PROPERTY

SYDNEY COAL FIELD,

CAPE BRETON.

By HENRY YOULE HIND, M. A.

BIBLIOTHÈQUE
SAINT-SULPICE

HALIFAX, N. S.
PRINTED BY JAMES BOWES & SONS, BEDFORD ROW.
1872.

CONTENTS.

1.—The Sydney Coal.
2.—Situation of the property.
3.—Submarine Mining in Cape Breton.
4.—General description of the rocks.
5.—The Main Coal seam.
6.—Amount of coal accessible.
7.—Mode of ventilation.
8.—The mode of working the property.
9.—The loading ground.
10.—Probable fault.
11.—Conclusion.
Act of Incorporation.

POINT ACONI COLLIERY,

NEAR SYDNEY, CAPE BRETON.

1.—THE SYDNEY COAL.

The Sydney Coal field of Cape Breton, has been practically known since 1827.

In that year the General Mining Association commenced shipping coal, and their exports alone up to the present time considerably exceed one million tons.

The Coal of the Sydney Mines has been almost exclusively taken from one seam, called the Main Coal seam. It is highly esteemed as a domestic coal, and for the production of Steam, American, French, and British Naval Officers have officially reported on this Coal and have uniformly awarded to it high commendation. "Its steam power is little inferior to that of Cardiff coal, and equals that of Newcastle." (Report of the Director of Naval construction at Brest.)

The Point Aconi property derives its chief importance from its being wholly underlaid by this important coal to an extent exceeding 20,000,000 tons.

2.—SITUATION OF POINT ACONI COLLIERY.

Point Aconi lies nearly due north of the entrance to Sydney Harbour. It is the most northern extremity of Boulardarie Island, which is separated from the main land of Cape Breton by the Little and Great Bras d'Or Straits.

The property under consideration, four and a half square miles, is wholly submarine as regards the ownership of the coal, but according to the present mining laws of Nova Scotia, the coal can be won by shafts sunk at any point on the land which appears most desirable, and does not interfere with existing colliery works. The present proprietors likewise own twenty acres of land near the

57676

peninsula of Point Aconi, conveniently situated, with the right to purchase more if desirable.

The position and boundaries of the property are shown on the accompanying plans, as well as its relations to the great colliery of the General Mining Association.

3.—SUBMARINE MINING IN CAPE BRETON.

The Coal on the Point Aconi property being wholly submarine it is proper to describe at the outset the results which experience have established in the Sydney Coal Field of this kind of mining, where so much depends on the character of the roof which overlies the submarine works.

The General Mining Association, have extended their works over an area of thirty-two acres under Lloyd's Cove, and about twenty-four acres under the ocean, between Cranberry Head and Black Point. The extraordinary dryness of these Submarine Works shows conclusively the impermeable character of the roof; for, on the Lloyd's Cove side of the Peninsula, at a distance of one-third of a mile under the sea, the mine is dry; there is no accumulation of drainage water, and the walls of the drift are not wet. Evaporation, heightened by the temperature (about sixty four degrees), and the ventilating current of air, suffice to keep the mine comparatively dry.

The quantity of coal raised from the Submarine workings in 1870 amounted to 66,224 tons.

4.—GENERAL DESCRIPTION OF THE ROCKS.

A section of the Coal measures is exposed on Boulardarie Island between Point Aconi and the outcrop of the Millstone Grit.

The general dip is north easterly at an angle of 6 degrees on Boulardarie Island; at Alder and Mope Points, the dip inclines more to the east, but about the same angle.

At Sydney Harbour where a very favorable opportunity exists for studying the rocks, the following details of the section are well exposed between the base of the coal measures and the Cranberry Head seam.

Vertical thickness of Section of the Coal Measures	1800	Feet.
General Dip 7° N. 60° E.		
Number of Coal seams	31	
Thickness of coal seams, varying from ½ inch to six feet.		
Aggregate thickness of coal	37	Feet.
Aggregate thickness of Bituminous Shales, some of which approach Cannel coal	26.5	do.
Thickness of Sandstones, many of the beds massive	562	do.
Thickness of Arenaceous and Argillaceous Shales	1127	do.
Thickness of Underclays	99	do.
Limestone*	3.11	do.
Total horizontal length of this Section	5000	yards.

There is no material difference between the mineral composition and physical structure of the strata on Boulardarie Island (coal measures), and the continuation of the same beds at Sydney Harbour.

The following is a tabulated *resumé* of the beds forming the roof between the main seam and the Lloyd's Cove Seam.† in ascending order :—

	Thickness.
MAIN SEAM	6 feet.
Shale	2 to 6 feet.
Sandstone	24 feet.
Shales	72 "
Sandstone	21 "
Shales and Sandstones	97 "
Sandstone	47 "
Shales and Sandstones	142 "
Sandstone	31 "
Shales	37 "
Sandstone	41 "
Shales and Sandstones	209 "
LLOYD'S COVE SEAM	5 "
Total thickness of intervening strata	723 "

The character of the roof between the Lloyd's Cove Seam and the Cranberry Head Seam may be tabulated as follows, in ascending order :—

	Thickness.			
LLOYD'S COVE SEAM	5 feet.			
Argillaceous Shale	7	"	9	inches
Sandstone	7	"	10	"
Shales and Underclays	20	"	0	"
Strong Sandstone	13	"	0	"

---

* Vide Section in detail by R. Brown, Esq., Journal of the Geological Society of London, 1849.

† For details showing the thickness and character of each bed of Shale and Sandstone, see the admirable section by Richard Brown, Esq., in the Proceedings of the Geological Society of London for the year 1849.

Shale and Sandstone	25 ft.	9 in.
Sandstone	10 "	0 "
Argillaceous Shales aud Sandstones	195 "	0 "
CRANBERRY HEAD SEAM	3 "	8 "
Total thickness of roof between Lloyd's cove Seam and Cranberry Head Seam	279 "	4 "

The following table shows the thickness at right angles to the dip (seven degrees north 60 E.), between the Main Seam, Lloyd's Cove Seam, and Cranberry head Seam :—

MAIN SEAM	0	feet.
LLOYD'S COVE SEAM	723	"
CRANBERRY HEAD SEAM	279	"
Thickness of Strata at right angles to dip between Main Seam and Cranbery Head Seam	1002	"
Including the thickness of the Seams	1016	"
Depth of a vertical shaft from the Cranberry Head Seam to the bottom of the Main Seam	1023	"

In the absence of dislocations, and with a roof nowhere less than seven hundred aud fifty feet in thickness, and composed of numerous thick bands of strong Sandstone between beds of Arenaceous Shale, the influx of sea water becomes almost impossible, and explains the reason why the Submarine workings of the General Mining Association are so unusually dry. Of course it is understood that the drainage waters from the old works to the rise are kept back by barriers, the lowest one being sixty feet in thickness.

5.—THE MAIN COAL SEAM.

Assuming that the Main Coal Seam is the lowest which would be worked on the Aconi property for many years to come it is necessary only to enumerate those which lie above it, and which would be passed through in sinking a shaft to win the Main Coal on Point Aconi Peninsula as indicated on the plan.

Depth of Shaft at Point indicated on the plan to strike the Main coal	690	Feet.
Passing through Seam of thickness unknown at a depth of	527	"
Passing through Seam of thickness unknown at a depth of	354	"
Passing through Lyle Seam at depth	330	"
Passing through Crandal Seam at depth	224	"

The Lloyd's Cove and Cranberry Head Seams are not intersected by this shaft, both of them lying north of the shaft on the Aconi peninsula, but the Lloyd's Cove Seam is pierced by the shaft at Alder Point, as described further on.

The Main Coal Seam, as already stated, is the chief source of supply to the General Mining Association at their Sydney Colliery. Its thickness is slighty variable.

At the coast exposure on the west side of Sydney Harbour it is	6 feet 0 in.
At the workings in the Queen's Pit, in 1863 (G. M. A.) it was	5 feet 6 in.
In 1866 it was reported by the Inspector to average...	6 feet 0 in.
At Point Aconi its total thickness exceeds	8 feet 0 in.
but some inches of the roof are of inferior quality, hence in the estimate of the available quantity of coal from the seam on the Aconi property it is taken as	6 feet 0 in.

The coal from this seam has been examined by numerous and competent experts, and tested on a large scale.*

Mr. Johnston for the United States Government in 1842 give the following analysis :—

Moisture	3.125
Volatile combustible matter	23.810
Fixed Carbon	67.570
Ash	5.495
	100.000

HOW, IN 1861. FROM SYDNEY MINES

Moisture and Volatile Combs. matter	31.87
Fixed Carbon	64.59
Ash	3.54
	100.00
Specific gravity	1.340
Evaporative power	8.87

DAWSON IN 1867. FROM VICTORIA MINES.

	Top Bench.	Bottom Bench.
Volatile matter	39.6	37.8
Fixed Carbon	57.2	59.6
Ash	3.2	2.6
	100.00	100.00

A recent analysis of a vertical section of the Main Seam, by Dr. How, for the General Mining Association, gives the following results :†—

---

* In 1860 the Inspector of Mines reported that a cargo of 450 tons of the Coal was shipped by order of the French Government to Brest. The director of naval construction reported on it as stated in a preceding paragraph.

† From a Report on Sydney Coal, by Henry How, D. C. L., Professor of Chemistry in the University of King's College, Windsor, N. S.

COMPOSITION OF AVERAGE SAMPLES OF THE WHOLE SEAM OF COAL.

BY MEDIUM COKING.

Moisture	3.04
Volatile combustible matter	31.14
Fixed Carbon	61.50
Ash (reddish brown)	4.32
	100.00
Coke per cent	65.82
Theoretical evaporative power	8.45 lb.

BY FAST COKING.

Total volatile matters	37.48
Coke	62.52
	100.00
Theoretical evaporative power	7.98 lb.

BY SLOW COKING.

Total volatile matters	29.70
Coke	70.30
	100.00
Theoretical evaporative power	9.06

Mean coke per cent	66.21
Mean theoretical evaporative power	8.49
Ash per cent	4.32
Sulphur per cent	1.24
Specific Gravity of average samples	1.30
Calculated weight of one cubic foot, unbroken	81.10
" " " " " broken	54.50
Space for one ton 2240 lb., on stowage ("Economic Weight")	41.10

COMPOSITION OF ASH.

Sand and clay	29.57
Peroxide of iron	51.53
Alumina	4.84
Sulphate of lime	10.98
Lime	3.05
Magnesia	0.23
Phosphoric acid, decided traces	
Manganese, traces	
Chlorine, traces	

"The details above given explain the well known high favour in which this Coal has been held for upwards of forty years for domestic use, and also for steam producing, by those who have employed it carefully."

The Director of Naval Construction at Brest reports the result of the trials made upon it to the Minister of Marine, as follows:—The trials of the Nova Scotia coal by La Perdrix show that, like Newcastle coals, it ignites easily, and produces a long, lively flame, little coloured. It swells a little in the fire and does not clog the bars. It gives but little clinker, and is not very brittle.

The steam power is little inferior to that of Cardiff coal and equals that of Newcastle. It is a fine coal and completely assimilable to that of Newcastle."

The whole number of calls of steamers, including French, English and American men-of-war, for coals in 1866 was sixty-six.

6.—AMOUNT OF COAL ACCESSIBLE.

For present purposes it is sufficient to consider the construction of works adequate to control the coal situated within a radius of 1000 yards from the main shaft on either side.

This area will command about 4,280,000 tons from the shaft at Point Aconi, and 2,000,000 tons from a similar shaft on Alder or Mope Points.

Allowing one-half for pillars and waste, the yield would amount to 100,000 tons for 31 years.

	TONS.
Thus:—Available coal from Main Seam at Point Aconi, within a radius of 1000 yards from shaft......	4,280,000
Deduct one-half for pillars and loss, and there remains.	2,140,000
or 100,000 tons for 21 years.	
At Alder or Mope Point:—	
Available coal from main Shaft within a radius of 1000 yards......	2,000,000
Deduct ½ for pillars and waste, and there remains	1,000,000
or 100,000 tons for 10 years.	

The mean gives 100,000 tons for 31 years.

In estimating the quantity of available coal, the average of six feet is assumed.

Considering one cubic yard to represent one ton, the amount of coal contained in each square mile of the Main Seam is equal to 6,195,200 tons. In the first workings of the Point Aconi Colliery, the proportion of rooms to pillars is assumed at one to two, or one-third available coal in the rooms and two-thirds to remain standing in the pillars.

With this ratio existing between the Bords and Pillars, the quantity of available coal per square mile from the Main Seam would be two million and sixty-five thousand tons (2,065,000.)

Between the Point Aconi property and that of the General Mining Association, it will be necessary to leave a barrier of coal say two hundred feet broad in order to secure the works to the dip from the influx of water from works to the rise. This barrier will surround the property and isolate it from all workings to the south west. Its integrity must be maintained, otherwise after the working out of the land area an influx of accumulated drainage water might be possible at any time. The dip of the strata is so uniform to the north east in this part of the Sydney Basin, that too great care cannot be taken at the outset in planning the working of Submarine Collieries. The contingency referred to is very remote, but in the event of a Colliery being established on the Point Aconi peninsula, it would be but a question of time which must be provided against at the commencement of operations at Point Aconi.

The estimated area on this property occupied by available coal, probably does not much exceed three square miles, for besides the barrier of two hundred feet which should be left between the coal belonging to the General Mining Association, south west of the Company's property, a narrow belt of unmarketable coal in the neighbourhood of the Fault, to be hereafter described, must be deducted.

Total amount of Coal contained in each square mile of the Main Seam, estimated at 6 feet in thickness	6,195,200 tons.
In three square miles	18,585,600 "

7.—VENTILATION.

Sir W. B. Armstrong in his address before the Institution of Mining Engineers, 3rd August, 1869, states "As regards ventilation, the Fan machines of the several constructions tried, have already exhibited great superiority over the old method of ventilating by an up-cast Furnace Shaft; and although the efficiency of he furnace system of ventilation is increased by depth, there is reason to believe that the fan will maintain its superiority to greater depths than are likely to be reached in mining."

With regard to Fan ventilation Mr. W. Cochrane stated in a paper read before the Institute of Mechanical Engineers at the Annual Congress, that "there could be no question that any practical requirement in the ventilation of mines could be satisfied by the Fan System, (Guibal's Ventilator) and it could not be urpassed in simplicity of construction, small liability to accident, and the little wear and tear to which its working parts were ubjected."

At Newcastle, dip workings have already been executed for considerably more than a mile to the dip of the Engine Pit bottom.

At Ashton-under-Lyne, the Astley Shaft is 2100 feet deep; from the bottom of this shaft, the engine plane to the dip is more than a mile in length. The deep workings are 1500 feet deeper than the bottom of the shaft and 3600 feet below the surface.

The economical advantages of mechanical ventilation have been recently discussed in a paper read before the North of England's Institute of Mining and Mechanical Engineers, by Mr. D. P. Morison.

The results are stated to be as follows:—

1st.—A saving in the consumption of fuel, in most cases, from 40 to 80 per cent. in favour of mechanical ventilation.

2.—The inapplicability of the furnace system to satisfy the demand on the occurrence of sudden emergencies.

3.—Economy in the wear and tear of plant.

Among the various fan machines for ventilating, Mr. Morison expressed himself in favour of Guibal's, the one most in use in England and the Continent of Europe.

8.—THE MODE OF WORKING THE PROPERTY.

The Bord and Pillar method of working this property will doubtless be adopted, as experience shows it to be the safest. Under all circumstances the introduction of coal cutting machinery is advisable, the more particularly in a country where wages are high, and where the winter storage of Coal is a matter of gr importance.

As this subject is one of paramount importance, and has alrea been specially noticed by the Government Inspector of Mines, it desirable to reproduce here the opinions of that gentleman, and urge the necessity of making due provision for winter undergrou storage in this Colliery.*

---

* Storage of Coal.—It may perhaps seem premature to cry "waste" at early a stage of mining as the very recent development of the mineral resour of this country implies; but, at a time when attention is being directed in Engla to the exhaustion of her coal supplies, and the consequent necessity of economi ing them by every available means, it cannot, I think, be considered inopportu to direct attention to a source of waste which may with care, to some extent, lessened?

In many of the Collieries the greater part of the slack made in working separated from the large Coal by riddling, and thrown aside in the mine. Th proportion thus taken out varies from five to twenty per cent. The slack is seldo removed, and has therefore largely accumulated. It is reasonable to suppose th if it could be sold even at a very small profit, it would not be left in the mine; an it is thus treated to avoid expense of depositing it on the surface, and the combu tion that would probably occur if a large quantity were heaped together. B attention to the peculiarity of each seam, and the manner in which the miner per forms his work, the proportion of slack made in the ordinary course of workin may be reduced, and the loss of merchantable coal from this cause be diminishe But there is another source of loss to which, inasmuch as it affects the revenu to a much greater extent, I wish to draw attention. I allude to the large stores o coal that are formed during the winter months. The suspension of shipment fo a period of from three to four months necessitates the adoption of one or tw courses: either the Colliery must be stopped, or be continued at work and the coa brought out and stored on the surface. It must be evident that in the former case both employers and workmen would be subject to much inconvenience and loss the workmen would be obliged to seek other means of employment, and the mine owner would be unprepared to commence operations on an adequate scale when the shipping was resumed. For this reason the latter course is adopted, and the consequence is a deterioration of the coal from exposure, and the production of a large proportion of slack both from this cause and from the breaking in putting down and relifting. To such an extent does this take place, that I have reason to believe that in some instances the produce of large coal from the heap has not much exceeded fifty per cent. When it is remembered that a large percentage has already been taken out in the mine, and that the coal brought to the surface is with respect to size in nearly a merchantable state, the loss of revenue from this cause must be apparent. Impressed with the importance of obviating this as much as possible, I have endeavored to induce the adoption of some means by which this loss may be reduced to a minimum, and I am hopeful that as the interests of the mine owner are seriously affected by so small a yield of saleable coal, they will readily adopt any practicable scheme for realizing so desirable a result. This would, I conceive, be to a considerable extent accomplished by an extension of the power of production by a judicious laying out of the mine, and the formation during the winter of a number of working places, together with the opening of more shafts or other means of bringing the coal to the surface. With such a provision much of the coal might be stored under ground and raised as required without interrupting the ordinary working of the Colliery. The injury to that portion which would be sent out of the mine would also be very much less if suitable erections were made for protecting it from the weather. There are details of arrange-

It would be altogether premature to introduce here a plan in tail for working this Colliery. Various considerations will operate deciding upon the most suitable location for a shaft, but an tline of the method to be adopted is embodied in the accompany- g sketch plan of "Workings to the Rise," appended to this port.

9.—THE LOADING GROUND.

The loading ground is deep, capacious and well sheltered. here are three modes of access to it, one by the Little Bras d' Or traits, one by the Great Bras d'Or Straits, and one by St. Peter's anal at the South Western extremity of Cape Breton Island.

The Little Bras d'Or at present will only admit vessels drawing 1 feet water at high tide, but a competent engineer has estimated he expense of blasting the flat sandstone rock at the entrance to he strait at $4000. The Great Bras d'Or Strait admits vessels of ny size, and there is deep water throughout both Straits to the oading ground with the exception named.

The St. Peter's Canal admits vessels drawing 14 feet of water, nd not exceeding 26 feet beam.

The admiralty Chart shows the depth of water between all the oints named in fathoms. A tug would be a necessary adjunct to he works.

Communication with the loading ground will be by tramway or light 2½ feet Railway with stationary engines, from the main shafts to the loading ground.

Distance from Point Aconi Shaft, to loading ground, one mile and three quarters.

Distance from Alder Point Shaft one quarter of a mile, assuming a shaft to be located at Point M on the Map. Grade, in part level, in part a gentle slope from the shafts to the loading ground at a mean elevation of from 20 to 26 feet above tide.

A Railway to North Sydney Harbour would be about ten miles in length from the Point Aconi Shaft, the ground is easy, and a two foot guage light mineral railway could be constructed at a

---

ment in carrying this out which it is unnecessary to state here; I make the suggestion with the hope of drawing the attention of owners and managers to the importance of devising some means of lessening a loss by which the interests of all are affected."—*Inspector's Report*, 1866.

comparatively small cost. Sydney Harbour as is well know possesses capacity and capabilities of the highest order.

10.—PROBABLE FAULT.

The foregoing pages have been written upon the assumptio that the attitude of the rocks underlying the whole of the propert was undisturbed, with the exception of the gentle dip to North east and East.

There is, however, considerable probability that the property i physically divided into two distinct portions by a Fault or Break which is represented by a red line on the plans. This suppose Fault passes up the Little Bras d'Or Strait and has resulted fron an uplift to the extent of about four hundred feet of a considerable tract of country to the North-west of the fault, which extend to an unknown distance to the North-east and South-west, far beyond the limits of the property on either course.

The effect which this great break will have upon the working of the property influences only the area east of it, or that portion which would be commanded by the Alder Point Shaft.

In view of the great probability of the existence of this break, it would be advisable to place the Alder Point Shaft at, or near M, as shown on the large plan.

The following would then be the depths at which the different seams of coal would be reached.

Depth of Main Coal at shaft	720 ft.
" " Lyle Seam	340
" " Crandall	236
" " Lloyd's Cove or Paint Seam.....	55

An inspection of the Plans will show the effect of this Break. The seams which were originally continuous are now in consequence of the uplift, heaved apart as represented by.

a - - - *a*
b - - - *b*
c - - - *c*
d - - - *d*

Dislocation produced by Faults are extremely numerous in the British coal fields, and some of them have treble the vertical displacement which occurs here in the Sydney coal field.

The Shaft at Alder Point takes in the Paint or Lloyd's Cove Seam whose outcrop lies to the north east of the Point Aconi Shaft.

As the existence of the Break does not appear to be known, and is not represented on Professor Leslie's Maps of the Sydney Coal field, I shall give my reasons at length for supposing it to exist.

The outline sketch plan of a part of the Sydney Coal field shows the known out-crop in continuous lines of the Sydney Main Coal. On Little Bras d'Or Strait it has not been found between the points *a*——*a*, and is supposed by some to lie in the bed of the Strait. If this were the case, the distance between the outcrops of the Main seam and the Paint seam at the entrance of the Little Bras d'Or Strait ought to involve an angle of dip of about 15 degrees, but the angle does not exceed 6 or 7 degrees.

If there were a cross anticlinal or undulation at the entrance to the Straits, the dips of the strata would certainly show it, as the rocks there are well exposed in Mural cliffs.

Upon the assumption that there is a break caused by an uplift to the extent of about 400 feet on the Boulardarie side, the known outcrops of the Main, Lyle, Crandall, and Paint Seams become intelligible and agree on both sides of the break in horizontal distance apart and angle of dip, with the results of calculation, as well as in structural arrangement generally.

Ignoring the existence of a break, the observed outcrops do not appear to be susceptible of intelligible reconciliation with observed facts.

I do not think that the break materially affects the value of the property on the side of deterioration, but it suggests a modification in the mode of working the Alder Point portion of the property, which at the first blush presents itself.

It has this advantage, that the Lloyd's Cove or Paint Seam becomes accessible from the same Shaft as would be used to work the Main Seam, and it has this disadvantage that it involves locating the Main Shaft at some distance from the Break (as at M) in order to work on both sides simultaneously, otherwise the operations on the north side would terminate the moment the miners came to the dead wall of the break.

CONCLUSION.

The entire property contains about 2,000,000 tons in the Main Coal Seam. Deducting one half for all contingencies, such as pillars, waste, proximity to the Fault (which would very probably only crush the coal on the line of Fracture), and there remains 1,000,000 tons, or sufficient to furnish 100,000 tons per annum, for 100 years from the Main Seam alone.

It must also be borne in mind that there is no reason why the workings should not extend beyond the present limits seawards of the property if eventually required.

The only question of moment, namely, that relating to the ventilation, has been satisfactorily answered by the opinions of the most eminent Mining Engineers quoted in preceding paragraphs.

The method of winning the coal is cheap, expeditious and free from many risks and expenses incident to coal mining.

The market is yearly increasing, and the pre-eminence of the coal for steam and domestic purposes has been established for a number of years on a very extended scale.

HENRY Y. HIND, M. A.,
GEOLOGIST.

Windsor, N. S., March 1st, 1872.

SKETC

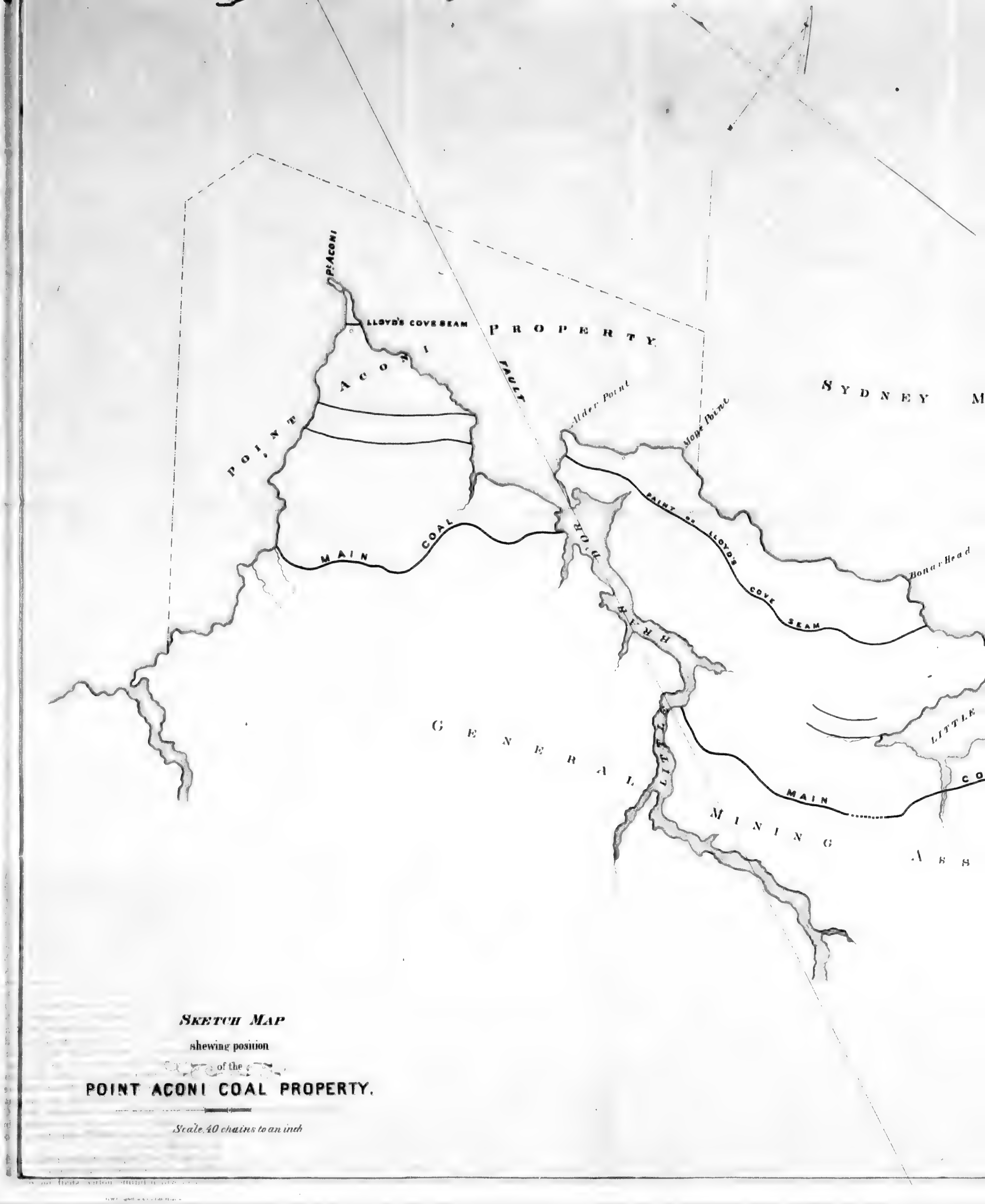
shewing

of

POINT ACONI C

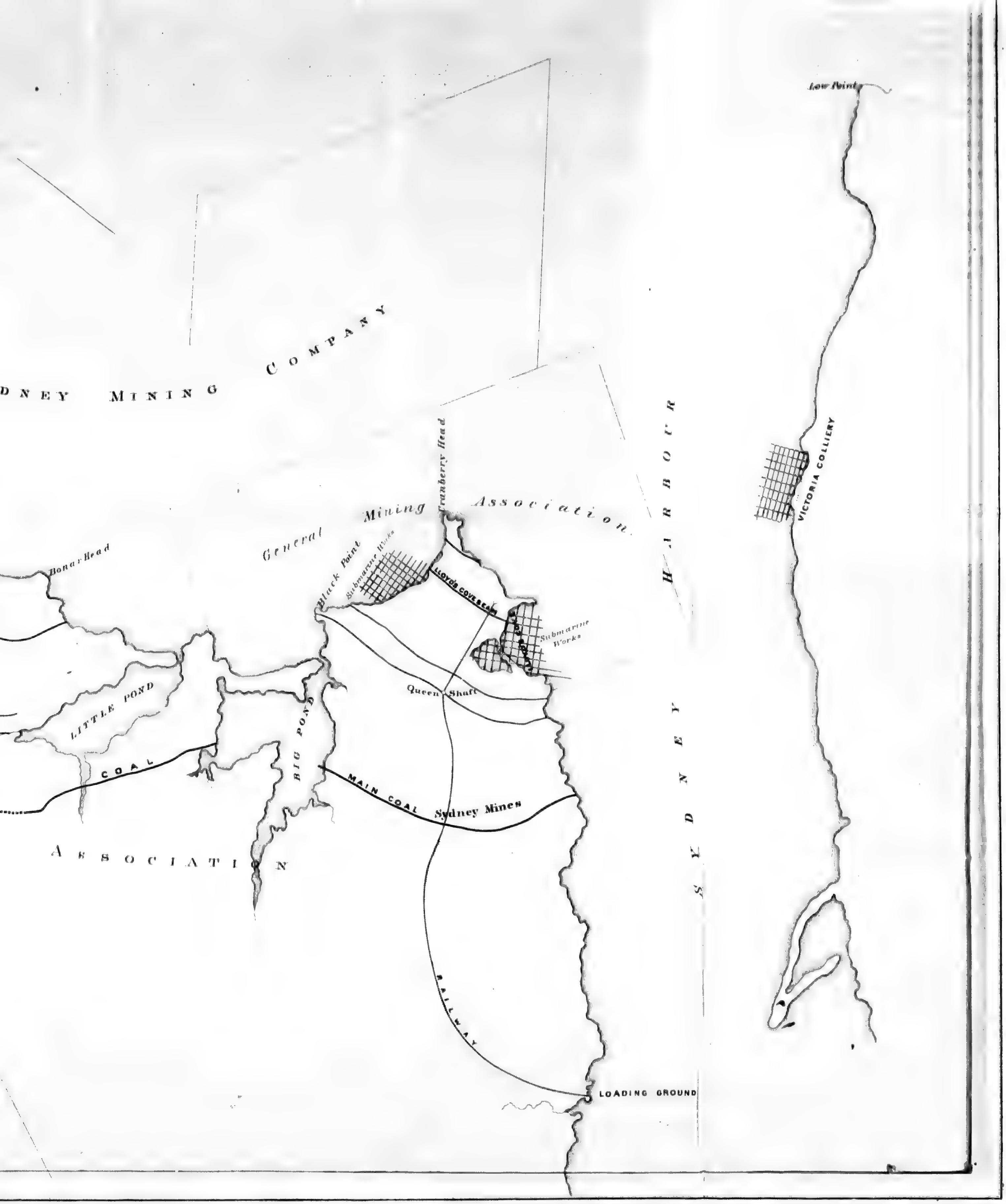
Scale, 40 ch

H.W Longfellow & Co. Lith Boston



SKETCH MAP
shewing position
of the
POINT ACONI COAL PROPERTY.

Scale, 40 chains to an inch



Low Point
DNEY MINING COMPANY
General Mining Association
Cranberry Head
Black Point
Submarine Works
LLOYD'S COVE SEAM
Submarine Works
Queen Shaft
Bonar Head
LITTLE POND
BIG POND
COAL
MAIN COAL Sydney Mines
ASSOCIATION
RAILWAY
LOADING GROUND
SYDNEY HARBOUR
VICTORIA COLLIERY

AN ACT

TO INCORPORATE

THE POINT ACONI COAL COMPANY.

BE IT ENACTED by the Governor, Council, and Assembly, as follows:—

1.—Hugh E. Ross, William Esson, William H. Moore, James B. Duffus, John McLean, Thomas E. Kenny, John Duffus, Alexander Anderson, William Duffus, and Jeremiah F. Kenny, their associates, successors and assigns, are hereby constituted a body politic and corporate by the name of the "Point Aconi Coal Company," for the purpose of purchasing, holding, leasing and selling Mines and Mining rights, and of opening and working coal mines in the Island of Cape Breton or elsewhere in the Province of Nova Scotia, and of manufacturing coal oil and other substances from coal, and trading in the products of such mines or manufactures, and transacting business connected with any of the purposes aforesaid, with full power to purchase, take or lease, or otherwise acquire any lands or other property; to construct and make such railways, tramways, or other roads as may be deemed necessary for the transportation of the products of the mines worked by such Company, and of other articles to and from such mines; to construct harbours and breakwaters; and to purchase, hire, construct, build or erect all such wharves, docks and piers, mills, houses, buildings and machinery as may from time to time appear expedient, and to do and perform all other matters and things which the Company may deem incidental or conducive to such objects or any of them.

2.—The Capital Stock of the Company shall be Five Hundred Thousand Dollars, to be divided into shares of Twenty Dollars each, which shall be personal property transmissible and assignable as such; and the Company shall have power to increase their Capital Stock to One Million Dollars by the issue of new shares; but the Company shall not go into operation until Twenty-five per-cent of the Capital Stock is actually paid up.

3.—The first meeting of the Company shall be held at such time and place in this Province as the above corporators or any three of them shall determine, of which public notice shall be given in one or more of the newspapers published in the city of Halifax in this Province, at least twenty days previous to such meeting and continued to the date thereof; at which or at any subsequent meeting the Company may be organized by the election of not less than three Directors and of other necessary officers; and the shareholders present in person or by proxy shall have power to organize the Company, establish Bye-Laws, and elect all necessary officers.

4.—No member of the corporation shall be liable in his person or separate estate for the debts of the Company to a greater amount in the whole than the amount of stock held by him, deducting therefrom the amount actually paid to the Company on account of such stock, unless he shall have rendered himself liable for a greater amount by becoming surety for the debts of the Company; but no Shareholder, who may have transferred his interest in the stock of the Company shall cease to be liable for any contracts of the Company entered into before the date of such transfer, so as any action in respect of such liability shall be brought within six months after such transfer.

5.—The Directors of the Company may receive lands, mines, buildings, wharves, machinery, mining rights or privileges, or any interest therein respectively, in payment for stock subscribed for, or of any instalment due thereon, but subject nevertheless to such conditions as to valuation or acceptance of the same or otherwise, as may be imposed by the Bye-Laws of the Company.

6.—The transfer of shares in the Company shall be valid and effectual for all purposes, from the time such transfer is made and entered in the books of the Company.

7.—A list of the stockholders of the Company and of the number of shares held by each of them on the first day of the months of May and November in each year, certified under the hands of the President and Secretary, shall be filed in the months of May and November in each year, with the Registrar of Deeds of the County or District where the principal works of the Company are situated in this Province; such certificate to contain the names of the stockholders, and the number of shares held by them respectively on the first day of the month in which such certificate is filed; and it shall not be necessary to file any other certificate of transfer or copy thereof.

8.—The meetings of the Company shall be held at such times and places in this Province as the Directors may appoint, and the Company through their Directors or otherwise shall appoint a recognized manager or agent resident in this Province, service on whom of all process notices and other documents shall be held to be sufficient service on the Company; and the name and address of such agent shall be filed with the Registrar of Deeds for the County of Halifax, and for the County or District where the principal works of the Company are situated; and in default of such appointment, or in case of the absence or death of such agent, process notices and documents may be served on any officer or employee of the Company, or for want of such officer or employee, may be posted on some principal building of the company; and such service or posting shall be deemed a sufficient service on the Company.

9.—Whenever it shall be necessary for the construction of any road, railway or tramway, or of any wharves, piers or docks, contemplated by this act, that the Company should be invested with the lands over which the same should pass or contiguous thereto, and no agreement can be made for the purchase thereof, it shall be lawful for the Directors to apply by petition with a plan annexed, to any one of the Judges of the Supreme Court, setting forth the nature and situation of the lands required, the names of the owners or occupiers thereof, and praying a conveyance of the same to the Company; whereupon such Judge being satisfied that the lands are required and are not more extensive than may be reasonably necessary, shall appoint a time and place for the consideration of such petition, and shall direct a proper notice in writing to be served upon the owners or occupiers of the lands, if in the Province, and to be published for the period of one month in at least two newspapers published in Halifax, and also in one newspaper in the County where the lands lie, if a newspaper be published in such County, requiring them to attend either personally or by attorney at such time and place; and the Judge shall require the Directors to nominate one appraiser, and the owners to appoint another appraiser, and the Judge shall nominate a third appraiser, but in case such owners shall not attend, or shall neglect or refuse or cannot agree to make such nomination, the Judge shall, on proof of such publication or service of such notice, nominate two appraisers, and shall by an order in writing direct the said three appraisers to value the lands so required; and the appraisers having first subscribed an affidavit in writing, to be sworn to before a Justice of the Peace, and annexed to such order, to the effect that they will faithfully make such appraisement, shall with all convenient speed proceed to and appraise such lands, and shall make such appraisement in writing and return it under the hands of the appraisers or a majority of them, with such order and affidavit, to a Judge of the Supreme Court, who may confirm, modify, alter or reject such appraisement, or direct an appraisement *de novo;* and the Company upon paying or tendering the amount of the appraised value as finally confirmed, and the expenses of the owners of such appraisement, to the owners, or in case of dispute to such parties as the Court or a Judge shall direct, and registering such order, affidavit, appraisement and confirmation in the office of the Registrar of Deeds for the County or District, where such lands lie, who is hereby required to register the same—shall be considered the owners of such lands.

10.—It shall be lawful for the Company to make or construct a railway, road or tramway, over, under or across any river, brook or stream, and over and across any railroad, tramroad or road, subject nevertheless in such cases to regulations to be made by the Court of sessions to ensure the safety of the inhabitants and their property.

11.—The Books and accounts of the Company shall at all times be open to the examination of such persons as the Governor in Council shall appoint to inspect the same.

12.—This act shall cease and determine if effective works shall not be commenced and continued under it within two years from the date of its passing.

OFFICE OF CLERK OF ASSEMBLY.

I, Henry C. D. Twining, Clerk of the House of Assembly of Nova Scotia, do hereby Certify that the foregoing is a true copy of the Bill entitled, "An Act to incorporate the Point Aconi Coal Company;" which passed the Legislature of the Province of Nova Scotia in the Session of 1872.

HENRY C. D. TWINING,
Clerk of Assembly of Nova Scotia.

Halifax, April, 1872.